

TITLE: What happened few minutes before day 0?

Abstract:

I am currently a PhD student in history of mathematics and I am working on the history of the developments of combinatorial game theory. Quite naturally, I started my study with Charles Leonard Bouton's first article on the Nim game, and the several variations that appeared afterwards (Wythoff's Nim, Moore's Nim_k, *Der Letzte gewinnt !* of Ahrens). Then, I went through the works between these articles and Sprague-Grundy's results to understand the construction and the completion of the impartial games theory. I realized that the German mathematician and chess player Emanuel Lasker brought many interesting ideas which definitely inspired Roland Sprague in his analysis of a global game seen as a sum of simpler ones. After that, Dawson's Chess played an important role for Richard Guy and Cedric Smith in the classification of octal games and their almost complete resolution. The work was much harder for Patrick Grundy and Cedric Smith when they tried to do the same with games in version misère, and even nowadays, the theory is far from being complete. Finally, I read interviews of Elwyn Berlekamp, Richard Guy and John Conway about the elaboration of *Winning Ways for Your Mathematical Plays* and interview of the latter about the writing of *On Numbers and Games*. I stopped my study at this point because I think *On Numbers and Games* reaches the highest level of mathematical abstraction applied to really concrete games.

Basically I know what John Conway said, but what I would like to know, is what he has not said... yet! How did he come to the creation of surreal numbers? What readings of the works behind Bouton's and Sprague-Grundy's results influenced him in his understanding of games? In his opinion, what mathematical resources helped him to construct his entire theory, and were missing to his predecessors? Who are Arthur, Bertha and Anne-Louise? And so many other questions!